

Rec'd PCT/PTO 11 MAR 2003

## Sequence Listing

&lt;110&gt; Hofmann, Kay

&lt;120&gt; Protease

&lt;130&gt; Protease Memorec

&lt;140&gt; US 09/869,309

&lt;141&gt; 2001-07-20

&lt;150&gt; 19902550.9

&lt;151&gt; 1999-01-22

&lt;150&gt; 19925946.1

&lt;151&gt; 1999-06-08

&lt;150&gt; 19929115.2

&lt;151&gt; 1999-06-24

&lt;160&gt; 20

&lt;170&gt; PatentIn Ver. 2.1

&lt;210&gt; 1

&lt;211&gt; 592

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1

Met Ala Ala Val Ala Ala Ala Leu Ala Arg Leu Leu Ala Ala Phe  
 1 5 10 15

Leu Leu Leu Ala Ala Gln Val Ala Cys Glu Tyr Gly Met Val His Val  
 20 25 30

Val Ser Gln Ala Gly Gly Pro Glu Gly Lys Asp Tyr Cys Ile Leu Tyr  
 35 40 45

Asn Pro Gln Trp Ala His Leu Pro His Asp Leu Ser Lys Ala Ser Phe  
 50 55 60

Leu Gln Leu Arg Asn Trp Thr Ala Ser Leu Leu Cys Ser Ala Ala Asp  
 65 70 75 80

Leu Pro Ala Arg Gly Phe Ser Asn Gln Ile Pro Leu Val Ala Arg Gly  
 85 90 95

Asn Cys Thr Phe Tyr Glu Lys Val Arg Leu Ala Gln Gly Ser Gly Ala  
 100 105 110

Arg Gly Leu Leu Ile Val Ser Arg Glu Arg Leu Val Pro Pro Gly Gly  
 115 120 125

Asn Lys Thr Gln Tyr Asp Glu Ile Gly Ile Pro Val Ala Leu Leu Ser  
 130 135 140

Tyr Lys Asp Met Leu Asp Ile Phe Thr Arg Phe Gly Arg Thr Val Arg  
 145 150 155 160

Ala Ala Leu Tyr Ala Pro Lys Glu Pro Val Leu Asp Tyr Asn Met Val  
 165 170 175

Ile Ile Phe Ile Met Ala Val Gly Thr Val Ala Ile Gly Gly Tyr Trp  
 180 185 190

Ala Gly Ser Arg Asp Val Lys Lys Arg Tyr Met Lys His Lys Arg Asp  
 195 200 205  
 Asp Gly Pro Glu Lys Gln Glu Asp Glu Ala Val Asp Val Thr Pro Val  
 210 215 220  
 Met Thr Cys Val Phe Val Val Met Cys Cys Ser Met Leu Val Leu Leu  
 225 230 235 240  
 Tyr Tyr Phe Tyr Asp Leu Leu Val Tyr Val Val Ile Gly Ile Phe Cys  
 245 250 255  
 Leu Ala Ser Ala Thr Gly Leu Tyr Ser Cys Leu Ala Pro Cys Val Arg  
 260 265 270  
 Arg Leu Pro Phe Gly Lys Cys Arg Ile Pro Asn Asn Ser Leu Pro Tyr  
 275 280 285  
 Phe His Lys Arg Pro Gln Ala Arg Met Leu Leu Leu Ala Leu Phe Cys  
 290 295 300  
 Val Ala Val Ser Val Val Trp Gly Val Phe Arg Asn Glu Asp Gln Trp  
 305 310 315 320  
 Ala Trp Val Leu Gln Asp Ala Leu Gly Ile Ala Phe Cys Leu Tyr Met  
 325 330 335  
 Leu Lys Thr Ile Arg Leu Pro Thr Phe Lys Ala Cys Thr Leu Leu Leu  
 340 345 350  
 Leu Val Leu Phe Leu Tyr Asp Ile Phe Phe Val Phe Ile Thr Pro Phe  
 355 360 365  
 Leu Thr Lys Ser Gly Ser Ser Ile Met Val Glu Val Ala Thr Gly Pro  
 370 375 380  
 Ser Asp Ser Ala Thr Arg Glu Lys Leu Pro Met Val Leu Lys Val Pro  
 385 390 395 400  
 Arg Leu Asn Ser Ser Pro Leu Ala Leu Cys Asp Arg Pro Phe Ser Leu  
 405 410 415  
 Leu Gly Phe Gly Asp Ile Leu Val Pro Gly Leu Leu Val Ala Tyr Cys  
 420 425 430  
 His Arg Phe Asp Ile Gln Val Gln Ser Ser Arg Val Tyr Phe Val Ala  
 435 440 445  
 Cys Thr Ile Ala Tyr Gly Val Gly Leu Leu Val Thr Phe Val Ala Leu  
 450 455 460  
 Ala Leu Met Gln Arg Gly Gln Pro Ala Leu Leu Tyr Leu Val Pro Cys  
 465 470 475 480  
 Thr Leu Val Thr Ser Cys Ala Val Ala Leu Trp Arg Arg Glu Leu Gly  
 485 490 495  
 Val Phe Trp Thr Gly Ser Gly Phe Ala Lys Val Leu Pro Pro Ser Pro  
 500 505 510  
 Trp Ala Pro Ala Pro Ala Asp Gly Pro Gln Pro Pro Lys Asp Ser Ala  
 515 520 525  
 Thr Pro Leu Ser Pro Gln Pro Pro Ser Glu Glu Pro Ala Thr Ser Pro  
 530 535 540

Trp Pro Ala Glu Gln Ser Pro Lys Ser Arg Thr Ser Glu Glu Met Gly  
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Ala Gly Ala Pro Met Arg Glu Pro Gly Ser Pro Ala Glu Ser Glu Gly  
565 570 575

Arg Asp Gln Ala Gln Pro Ser Pro Val Thr Gln Pro Gly Ala Ser Ala  
580 585 590

<210> 2  
<211> 520  
<212> PRT  
<213> Homo sapiens

<400> 2  
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Ser Gly Asn Gly Thr Thr Lys Asp Tyr Cys Met Leu Tyr Asn Pro Tyr  
35 40 45

Trp Thr Ala Leu Pro Ser Thr Leu Glu Asn Ala Thr Ser Ile Ser Leu  
50 55 60

Met Asn Leu Thr Ser Thr Pro Leu Cys Asn Leu Ser Asp Ile Pro Pro  
65 70 75 80

Val Gly Ile Lys Ser Lys Ala Val Val Val Pro Trp Gly Ser Cys His  
85 90 95

Phe Leu Glu Lys Ala Arg Ile Ala Gln Lys Gly Gly Ala Glu Ala Met  
100 105 110

Leu Val Val Asn Asn Ser Val Leu Phe Pro Pro Ser Gly Asn Arg Ser  
115 120 125

Glu Phe Pro Asp Val Lys Ile Leu Ile Ala Phe Ile Ser Tyr Lys Asp  
130 135 140

Phe Arg Asp Met Asn Gln Thr Leu Gly Asp Asn Ile Thr Val Lys Met  
145 150 155 160

Tyr Ser Pro Ser Trp Pro Asn Phe Asp Tyr Thr Met Val Val Ile Phe  
165 170 175

Val Ile Ala Val Phe Thr Val Ala Leu Gly Gly Tyr Trp Ser Gly Leu  
180 185 190

Val Glu Leu Glu Asn Leu Lys Ala Val Thr Thr Glu Asp Arg Glu Met  
195 200 205

Arg Lys Lys Lys Glu Glu Tyr Leu Thr Phe Ser Pro Leu Thr Val Val  
210 215 220

Ile Phe Val Val Ile Cys Cys Val Met Met Val Leu Leu Tyr Phe Phe  
225 230 235 240

Tyr Lys Trp Leu Val Tyr Val Met Ile Ala Ile Phe Cys Ile Ala Ser



Ala Leu Ala Tyr Gly Ser Leu Leu Leu Met Ala Leu Leu Pro Ile Phe  
 35 40 45  
 Phe Gly Ala Leu Arg Ser Val Arg Cys Ala Arg Gly Lys Asn Ala Ser  
 50 55 60  
 Asp Met Pro Glu Thr Ile Thr Ser Arg Asp Ala Ala Arg Phe Pro Ile  
 65 70 75 80  
 Ile Ala Ser Cys Thr Leu Leu Gly Leu Tyr Leu Phe Phe Lys Ile Phe  
 85 90 95  
 Ser Gln Glu Tyr Ile Asn Leu Leu Leu Ser Met Tyr Phe Phe Val Leu  
 100 105 110  
 Gly Ile Leu Ala Leu Ser His Thr Ile Ser Pro Phe Met Asn Lys Phe  
 115 120 125  
 Phe Pro Ala Ser Phe Pro Asn Arg Gln Tyr Gln Leu Leu Phe Thr Gln  
 130 135 140  
 Gly Ser Gly Glu Asn Lys Glu Glu Ile Ile Asn Tyr Glu Phe Asp Thr  
 145 150 155 160  
 Lys Asp Leu Val Cys Leu Gly Leu Ser Ser Ile Val Gly Val Trp Tyr  
 165 170 175  
 Leu Leu Arg Lys His Trp Ile Ala Asn Asn Leu Phe Gly Leu Ala Phe  
 180 185 190  
 Ser Leu Asn Gly Val Glu Leu Leu His Leu Asn Asn Val Ser Thr Gly  
 195 200 205  
 Cys Ile Leu Leu Gly Gly Leu Phe Ile Tyr Asp Val Phe Trp Val Phe  
 210 215 220  
 Gly Thr Asn Val Met Val Thr Val Ala Lys Ser Phe Glu Ala Pro Ile  
 225 230 235 240  
 Lys Leu Val Phe Pro Gln Asp Leu Leu Glu Lys Gly Leu Glu Ala Asn  
 245 250 255  
 Asn Phe Ala Met Leu Gly Leu Gly Asp Val Val Ile Pro Gly Ile Phe  
 260 265 270  
 Ile Ala Leu Leu Leu Arg Phe Asp Ile Ser Leu Lys Lys Asn Thr His  
 275 280 285  
 Thr Tyr Phe Tyr Thr Ser Phe Ala Ala Tyr Ile Phe Gly Leu Gly Leu  
 290 295 300  
 Thr Ile Phe Ile Met His Ile Phe Lys His Ala Gln Pro Ala Leu Leu  
 305 310 315 320  
 Tyr Leu Val Pro Ala Cys Ile Gly Phe Pro Val Leu Val Ala Leu Ala  
 325 330 335  
 Lys Gly Glu Val Thr Glu Met Phe Ser Tyr Glu Glu Ser Asn Pro Lys  
 340 345 350  
 Asp Pro Ala Ala Val Thr Glu Ser Lys Glu Gly Thr Glu Ala Ser Ala  
 355 360 365  
 Ser Lys Gly Leu Glu Lys Lys Glu Lys  
 370 375

<210> 4  
 <211> 384  
 <212> PRT  
 <213> Homo sapiens

<400> 4  
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 Phe Arg Ser Leu Asn Met Asp Phe Glu Asn Gln Asp Lys Glu Lys Asp  
 35 40 45  
 Ser Asn Ser Ser Ser Gly Ser Phe Asn Gly Asn Ser Thr Asn Asn Ser  
 50 55 60  
 Ile Gln Thr Ile Asp Ser Thr Gln Ala Leu Phe Leu Pro Ile Gly Ala  
 65 70 75 80  
 Ser Val Ser Leu Leu Val Met Phe Phe Phe Phe Asp Ser Val Gln Val  
 85 90 95  
 Val Phe Thr Ile Cys Thr Ala Val Leu Ala Thr Ile Ala Phe Ala Phe  
 100 105 110  
 Leu Leu Leu Pro Met Cys Gln Tyr Leu Thr Arg Pro Cys Ser Pro Gln  
 115 120 125  
 Asn Lys Ile Ser Phe Gly Cys Cys Gly Arg Phe Thr Ala Ala Glu Leu  
 130 135 140  
 Leu Ser Phe Ser Leu Ser Val Met Leu Val Leu Ile Trp Val Leu Thr  
 145 150 155 160  
 Gly His Trp Leu Leu Met Asp Ala Leu Ala Met Gly Leu Cys Val Ala  
 165 170 175  
 Met Ile Ala Phe Val Arg Leu Pro Ser Leu Lys Val Ser Cys Leu Leu  
 180 185 190  
 Leu Ser Gly Leu Leu Ile Tyr Asp Val Phe Trp Val Phe Phe Ser Ala  
 195 200 205  
 Tyr Ile Phe Asn Ser Asn Val Met Val Lys Val Ala Thr Gln Pro Ala  
 210 215 220  
 Asp Asn Pro Leu Asp Val Leu Ser Arg Lys Leu His Leu Gly Pro Asn  
 225 230 235 240  
 Val Gly Arg Asp Val Pro Arg Leu Ser Leu Pro Gly Lys Leu Val Phe  
 245 250 255  
 Pro Ser Ser Thr Gly Ser His Phe Ser Met Leu Gly Ile Gly Asp Ile  
 260 265 270  
 Val Met Pro Gly Leu Leu Leu Cys Phe Val Leu Arg Tyr Asp Asn Tyr  
 275 280 285  
 Lys Lys Gln Ala Ser Gly Asp Ser Cys Gly Ala Pro Gly Pro Ala Asn  
 290 295 300

Ile Ser Gly Arg Met Gln Lys Val Ser Tyr Phe His Cys Thr Leu Ile  
 305 310 315 320  
 Gly Tyr Phe Val Gly Leu Leu Thr Ala Thr Val Ala Ser Arg Ile His  
 325 330 335  
 Arg Ala Ala Gln Pro Ala Leu Leu Tyr Leu Val Pro Phe Thr Leu Leu  
 340 345 350  
 Pro Leu Leu Thr Met Ala Tyr Leu Lys Gly Asp Leu Arg Arg Met Trp  
 355 360 365  
 Ser Glu Pro Phe His Ser Lys Ser Ser Ser Ser Arg Phe Leu Glu Val  
 370 375 380

<210> 5  
 <211> 113  
 <212> PRT  
 <213> Mus musculus

<400> 5  
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 Ser Thr Ile Ala Tyr Ala Val Gly Met Ile Ile Thr Phe Val Val Leu  
 35 40 45  
 Met Val Met Lys Thr Gly Gln Pro Ala Leu Leu Tyr Leu Val Pro Cys  
 50 55 60  
 Thr Leu Ile Thr Val Ser Val Val Ala Trp Ser Arg Lys Glu Met Lys  
 65 70 75 80  
 Lys Phe Trp Lys Gly Ser Ser Tyr Gln Val Met Asp His Leu Asp Tyr  
 85 90 95  
 Ser Thr Asn Glu Glu Asn Pro Val Thr Thr Asp Glu Gln Ile Val Gln  
 100 105 110  
 Gln

<210> 6  
 <211> 378  
 <212> PRT  
 <213> Mus musculus

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 Ala Leu Ala Tyr Gly Ser Leu Leu Leu Met Ala Leu Leu Pro Ile Phe  
 35 40 45

Phe Gly Ala Leu Pro Ser Val Arg Cys Ala Arg Gly Lys Ser Ser Ser  
50 55 60  
Asp Met Pro Glu Thr Ile Thr Ser Arg Asp Ala Ala Arg Phe Pro Ile  
65 70 75 80  
Ile Ala Ser Cys Thr Leu Leu Gly Leu Tyr Leu Phe Phe Lys Ile Phe  
85 90 95  
Ser Gln Glu Tyr Ile Asn Leu Leu Leu Ser Met Tyr Phe Phe Val Leu  
100 105 110  
Gly Ile Leu Ala Leu Ser His Thr Ile Ser Pro Phe Met Asn Lys Phe  
115 120 125  
Phe Pro Ala Asn Phe Pro Asn Arg Gln Tyr Gln Leu Leu Phe Thr Gln  
130 135 140  
Gly Ser Gly Glu Asn Lys Glu Glu Ile Ile Asn Tyr Glu Phe Asp Thr  
145 150 155 160  
Lys Asp Leu Val Cys Leu Gly Leu Ser Ser Val Val Gly Val Trp Tyr  
165 170 175  
Leu Leu Arg Lys His Trp Ile Ala Asn Asn Leu Phe Gly Leu Ala Phe  
180 185 190  
Ser Leu Asn Gly Val Glu Leu Leu His Leu Asn Asn Val Ser Thr Gly  
195 200 205  
Cys Ile Leu Leu Gly Gly Leu Phe Ile Tyr Asp Ile Phe Trp Val Phe  
210 215 220  
Gly Thr Asn Val Met Val Thr Val Ala Lys Ser Phe Glu Ala Pro Ile  
225 230 235 240  
Lys Leu Val Phe Pro Gln Asp Leu Leu Glu Lys Gly Leu Glu Ala Asp  
245 250 255  
Asn Phe Ala Met Leu Gly Leu Gly Asp Ile Val Ile Pro Gly Ile Phe  
260 265 270  
Ile Ala Leu Leu Leu Arg Phe Asp Ile Ser Leu Lys Lys Asn Thr His  
275 280 285  
Thr Tyr Phe Tyr Thr Ser Phe Ala Ala Tyr Ile Phe Gly Leu Gly Leu  
290 295 300  
Thr Ile Phe Ile Met His Ile Phe Lys His Ala Gln Pro Ala Leu Leu  
305 310 315 320  
Tyr Leu Val Pro Ala Cys Ile Gly Phe Pro Val Leu Val Ala Leu Ala  
325 330 335  
Lys Gly Glu Val Ala Glu Met Phe Ser Tyr Glu Glu Ser Asn Pro Lys  
340 345 350  
Asp Pro Ala Ala Val Thr Glu Ser Lys Glu Glu Ser Thr Glu Ala Ser  
355 360 365  
Ala Ser Lys Arg Leu Glu Lys Lys Glu Lys  
370 375



<210> 7  
 <211> 257  
 <212> PRT  
 <213> Mus musculus

<220>  
 <221> misc\_feature  
 <222> (175)..(175)  
 <223> Xaa can be any naturally occurring amino acid

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 20 25 30  
 Thr Gly His Trp Leu Leu Met Asp Ala Leu Ala Met Gly Leu Cys Val  
 35 40 45  
 Ala Met Ile Ala Phe Val Arg Leu Pro Ser Leu Lys Val Ser Cys Leu  
 50 55 60  
 Leu Leu Ser Gly Leu Leu Ile Tyr Asp Val Phe Trp Val Phe Phe Ser  
 65 70 75 80  
 Ala Tyr Ile Phe Asn Ser Asn Val Met Val Lys Val Ala Thr Gln Pro  
 85 90 95  
 Ala Asp Asn Pro Leu Asp Val Leu Ser Arg Lys Leu His Leu Gly Pro  
 100 105 110  
 Asn Val Gly Arg Asp Val Pro Arg Leu Ser Leu Pro Gly Lys Leu Val  
 115 120 125  
 Phe Pro Ser Ser Thr Gly Ser His Phe Ser Met Leu Gly Ile Gly Asp  
 130 135 140  
 Ile Val Met Pro Gly Leu Leu Leu Cys Phe Val Leu Arg Tyr Asp Asn  
 145 150 155 160  
 Tyr Lys Lys Gln Ala Ser Gly Asp Ser Cys Gly Ala Pro Gly Xaa Ala  
 165 170 175  
 Asn Ile Ser Gly Arg Met Gln Lys Val Ser Tyr Phe His Cys Thr Leu  
 180 185 190  
 Ile Gly Tyr Phe Val Gly Leu Leu Thr Ala Thr Val Ala Ser Arg Val  
 195 200 205  
 His Arg Ala Ala Gln Pro Ala Leu Leu Tyr Leu Val Pro Phe Thr Leu  
 210 215 220  
 Leu Pro Leu Leu Thr Met Ala Tyr Leu Lys Gly Asp Leu Arg Arg Met  
 225 230 235 240  
 Trp Ser Glu Pro Phe His Ser Lys Ser Ser Ser Arg Phe Leu Glu  
 245 250 255

Val

<210> 8

<211> 587  
 <212> PRT  
 <213> *Saccharomyces cerevisiae*

<400> 8

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Ser Arg Ala Phe Arg Asn Asn Ser Ser Ser Ala Asn Gln Ser Ala Ser
          20           25           30

Asn Lys Glu Leu Glu Gln Val Phe Glu Gln Ile Asn Ala Ile Val Glu
          35           40           45

Asn His Asn Asn Lys Leu Thr Thr Ala Phe Asp Lys Ile Ser Tyr Arg
          50           55           60

Val Ala His Lys Ile Thr His Leu Val Glu Ser His Ser Leu Val Phe
          65           70           75           80

Asn Tyr Ala Thr Leu Val Leu Ile Ala Ser Ala Leu Val Val Ile Gly
          85           90           95

Ser Phe Thr Ser Ile Ser Ser Ile Pro Phe Thr Ala Leu Pro Pro Thr
          100          105          110

Arg Glu His Ser Leu Phe Asp Pro Thr Asp Phe Asp Val Asp His Asp
          115          120          125

Cys His Val Ile Tyr Arg Glu Asn Asp Glu Asp Lys Lys Lys Lys Lys
          130          135          140

Lys Ser Lys Arg Phe Phe Asp Met Met Asp Glu Lys His Ala Ile Ile
          145          150          155          160

Leu Pro Leu Thr Ser Gly Cys Thr Leu Leu Ala Leu Tyr Phe Val Ile
          165          170          175

Lys Lys Leu His Leu Asn Trp Leu Lys Tyr Val Val Lys Ile Leu Asn
          180          185          190

Phe Asn Ile Thr Leu Leu Asn Ile Pro Ala Gly Thr Phe Val Tyr Ser
          195          200          205

Tyr Phe Leu Asn Ser Leu Phe Arg Asn Leu Ser His Leu Ala Ser Trp
          210          215          220

Asn Pro Leu Val Val Leu Pro Arg Tyr Arg Val Thr Ile Ala Asp Asp
          225          230          235          240

Asn Glu Asp Leu Asn Lys Ile Gly Gly Phe Val Thr Asn Leu Asn Tyr
          245          250          255

Lys Asp Gly Leu Thr Asn Ser Val Val His Lys Lys Thr Leu Asp Glu
          260          265          270

Ile Glu Lys Asp His Trp Met Lys His Phe Tyr Arg Arg Glu Leu Val
          275          280          285

Glu Pro Lys Asp Ile Lys Ser Lys Arg Gln Ile Ser Asn Met Tyr Leu
          290          295          300

Asn Ser Ala Leu Ile Val Ser Phe Val Leu Ser Ile Val Ser Thr Val
          305          310          315          320

Tyr Phe Tyr Leu Ser Pro Asn Asp Trp Leu Ile Ser Asn Ala Val Ser

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325	330	335
Met Asn Met Ala Ile Trp Ser Ile	Ala Gln Leu Lys Leu Lys Asn Leu	
340	345	350
Lys Ser Gly Ala Leu Ile Leu Ile	Ala Leu Phe Phe Tyr Asp Ile Cys	
355	360	365
Phe Val Phe Gly Thr Asp Val Met Val Thr Val	Ala Thr Asn Leu Asp	
370	375	380
Ile Pro Val Lys Leu Ser Leu Pro Val Lys	Phe Asn Thr Ala Gln Asn	
385	390	400
Asn Phe Asn Phe Ser Ile Leu Gly Leu Gly Asp	Ile Ala Leu Pro Gly	
	405	410
Met Phe Ile Ala Met Cys Tyr Lys Tyr Asp	Ile Trp Lys Trp His Leu	
	420	425
Asp His Asp Asp Thr Glu Phe His Phe Leu Asn Trp	Ser Tyr Val Gly	
	435	440
Lys Tyr Phe Ile Thr Ala Met Val Ser Tyr Val	Ala Ser Leu Val Ser	
	450	455
Ala Met Val Ser Leu Ser Ile Phe Asn Thr	Ala Gln Pro Ala Leu Leu	
	465	470
Tyr Ile Val Pro Ser Leu Leu Ile Ser Thr	Ile Leu Val Ala Cys Trp	
	485	490
Asn Lys Asp Phe Lys Gln Phe Trp Asn Phe Gln Tyr	Asp Thr Ile Glu	
	500	505
Val Asp Lys Ser Leu Lys Lys Ala Ile Glu Lys Lys	Glu Asn Ser Ile	
	515	520
Thr Tyr Ser Thr Phe Ile Leu Ser Glu Tyr Tyr	Asn Asp Ala Asp Lys	
	530	535
Tyr Ala Leu Leu Gly Asp Asp Val Asn Glu Asn	Phe Asp Asp Asp Glu	
	545	550
Glu Phe Val Gln Glu Glu Asp Leu Ser Asp Ser	Ser Glu Glu Glu Leu	
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Ser Glu Glu Asp Leu Leu Asp Asp Glu Ser Ser		
	580	585

<210> 9

<211> 1776

<212> DNA

<213> *Saccharomyces cerevisiae*

<400> 9

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ggcaaagact actgcatcct ctacaaccgc cagtgggccc atcttccgca cgacctcagc 180
aaggcatctt tcctgcagct gcgcaactgg acggcctccc tgctctgctc cgcagccgac 240
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tatgagaaag tgaggctggc ccagggcagc ggagcacgcg ggctgctcat cgtcagcagg 360
gagaggctgg tcccccggg gggttaataag acgcagtatg atgagattgg cattcccgtg 420
gccctgctca gctacaaaga catgctggac atcttcacgc gtttcggccg cacggtgagg 480

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aggtacatga	agcacaagcg	cgacgatggg	cccagagaagc	aggaggacga	ggcgggtggac	660
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gctggagccc	ccatgcggga	gcctgggagc	ccagctgaat	ccgagggccg	ggaccaggcc	1740
cagccgtccc	cggtaaccca	gcctggcgcc	tccggc			1776

<210> 10  
 <211> 1560  
 <212> DNA  
 <213> Homo sapiens

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tccatttagt	tgatgaatct	gacttccaca	ccactatgca	acctttctga	tattcctctc	240
gttggcataa	agagcaaaagc	agttgtgggt	ccatggggaa	gctgccattt	tcttgaaaaa	300
gccagaattg	cacagaaagg	agggtgctgaa	gcaatgttag	ttgtcaataa	cagtgtccta	360
tttctccct	caggtaacag	atctgaatct	cctgatgtga	aaatactgat	tgcatcttata	420
agctacaaag	acttttagaga	tatgaaccag	actctaggag	ataacattac	tgtgaaaaatg	480
tattctccat	cgtggcctaa	ctttgattat	actatgggtg	ttatttttgt	aattgcggtg	540
ttcactgtgg	cattagggtg	atactggagt	ggactagtgt	aattggaaaa	cttgaaagca	600
gtgacaactg	aagatagaga	aatgaggaaa	aagaagggaag	aatattttaac	ttttagtcct	660
cttacagttg	taatatattgt	ggtcatctgc	tgtgttatga	tggtcttact	ttatttcttc	720
tacaaatggt	tggtttatgt	tatgatagca	attttctgca	tagcatcagc	aatgagtctg	780
tacaactgtc	ttgctgcact	aattcataag	ataccatatg	gacaatgcac	gattgcatgt	840
cgtggcaaaa	acatggaagt	gagacttatt	tttctctctg	gactgtgcat	agcagtagct	900
gttgtttggg	ctgtgtttcg	aaatgaagac	agggtgggctt	ggattttaca	ggatatcttg	960
gggattgctt	tctgtctgaa	tttaattaaa	acactgaagt	tgcccaactt	caagtcatgt	1020
gtgatacttc	taggccttct	cctcctctat	gatgtatttt	ttgttttcat	aacaccattc	1080
atcacaaaaga	atggtgagag	tatcatgggt	gaactcgag	ctggaccttt	tggaaataat	1140
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gcatactgta	gaagatttga	tgttcagact	ggttcttctt	acataacta	tgtttctgtc	1320
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gggcaacctg	ctctcctcta	tttagtacct	tgcacactta	ttactgcctc	agttgttgcc	1440
tgagagcgtg	aggaaatgaa	aaagtctctg	aaaggtaaca	gctatcagat	gatggaccat	1500
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<210> 11  
 <211> 1131  
 <212> DNA  
 <213> Homo sapiens

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ctcatggcgc tgctgcccac cttcttcggc gccctgcgct ccgtacgctg cgcccgcggc 180
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atcgccagct gcacactctt ggggctctac ctctttttca aaatattctc ccaggagtac 300
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atcagcccct tcatgaataa gttttttcca gccagctttc caaatcgaca gtaccagctg 420
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aaggacctgg tgtgcctggg cctgagcagc atcggttggc tctggtacct gctgaggaag 540
cactggattg ccaacaacct ttttggcctg gccttctccc ttaatggagt agagctcctg 600
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acagagatgt tcagttatga ggagtcaaat cctaaggatc cagcggcagt gacagaatcc 1080
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<210> 12
<211> 1152
<212> DNA
<213> Homo sapiens

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gaaaatcaag ataaggagaa agacagtaat agttcttctg ggtctttcaa tggcaacagc 180
accaataata gcattcaaac aattgactct acccaggctc tgttccttcc aattggagca 240
tctgtctctc ttttagtaat gttcttcttc tttgactcag ttcaagtagt ttttacaata 300
tgtacagcag ttcttgcaac gatagctttt gcttttcttc tcttcccgat gtgccagtat 360
ttaacaagac cctgctcacc tcagaacaag atttcctttg gttgctgtgg acgttttact 420
gctgctgagt tgctgtcatt ctctctgtct gtcattgctc tcttcacttg ggttcttact 480
ggccatttgc ttctcatgga tgcactggcc atgggcctct gtgtcgccat gatcgctt 540
gtccgcctgc cgagcctcaa ggtctcctgc ctgcttctct cagggcttct catctatgat 600
gtcttttggg tatttttctc agcctacatc ttcaatagca acgtcatggt gaaggtggcc 660
actcagccgg ctgacaatcc ccttgacgtt ctatcccgga agctccacct ggggcccaat 720
gttgggcgtg atgttctctg cctgtctctg cctggaaaac tgggtcttcc aagctccact 780
ggcagccact tctccatgga gggcatcgga gacatcgta tgccctggtc cctactatgc 840
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cccgccttcc tctatttggg gccatttact ttattgccac tcttcacgat ggcctattta 1080
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ttcctggaag ta 1152

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<210> 13
<211> 339
<212> DNA
<213> Mus musculus

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<400> 13
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atgatcatta cctttgttgt cctgatggtg atgaaaacag ggcagcctgc tctcctctac 180
ttggtacctt gtacacttat tactgtctca gtcgttgcct ggagtcgtaa ggaaatgaaa 240
aagttctgga aaggcagcag ctatcaggtg atggaccacc tggactattc aacaaatgaa 300
gaaaatccag tgacgactga tgagcagatt gtacaacag 339

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<210> 14
<211> 1134
<212> DNA
<213> Mus musculus

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<400> 14
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aagagctctt cggacatgcc agaaaccatc accagtcgag atgccgccc cttccccatc 240
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gccgagatgt tcagttatga ggagtcacac cctaaagatc cagcagccgt gactgaatcc 1080
aaagaggagt caacagaggc gtcggcatcg aaggaggctag agaagaagga gaaa 1134

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<210> 15
<211> 771
<212> DNA
<213> Mus musculus

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<220>
<221> misc_feature
<222> (524)..(525)
<223> n is a, c, g, or t

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<400> 15
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gctctggcca tgggtctctg tgttgccatg atcgcccttcg tccgcctgcc aagcctcaag 180
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ctcgacgttc tgtccaggaa gctccacctg ggacccaatg tggggcgtag tgttcctcgc 360
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ggcatcgggg acattgtgat gcccggcctc ctgttatgct ttgttcttcg ctatgacaac 480
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ccatttacc tattgccact cctcaccatg gcctacctaa aggggtgactt acggaggatg 720
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```

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<210> 16
<211> 1761
<212> DNA
<213> Saccharomyces cerevisiae

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<400> 16
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gaacagatca atgctatagt tgaaaaccac aataacaaat taaccactgc ctttgataag 180
atatcatatc gcgttgctca caagattaca cacttgggtg aaagccattc tttagtattc 240
aactacgcca ctttagttct catcgcaagt gctttggctg ttattggctc atttacgtct 300
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aagaaaaaga agaaaagcaa gaggtttttc gatatgatgg atgaaaaaca tgcgattata 480
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ctaaactggc taaaatatgt ggtgaaaatt ttgaatttta atataacact gctaaatata 600
ccagctggca catttgtcta ctctacttt ctcaactcac ttttcagaaa cctatcacat 660

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<210> 17  
 <211> 1560  
 <212> DNA  
 <213> Homo sapiens

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<400> 17
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tacaactgtc ttgctgcact aattcataag ataccatag gacaatgcac gattgcatgt 840
cgtggcaaaa acatggaagt gagacttatt tttctctctg gactgtgcat agcagtagct 900
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<210> 18  
 <211> 520  
 <212> PRT  
 <213> Homo sapiens

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<400> 18
Met Gly Pro Gln Arg Arg Leu Ser Pro Ala Gly Ala Ala Leu Leu Trp
  1           5           10          15
Gly Phe Leu Leu Gln Leu Thr Ala Ala Gln Glu Ala Ile Leu His Ala
      20           25           30

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Ser	Gly	Asn	Gly	Thr	Thr	Lys	Asp	Tyr	Cys	Met	Leu	Tyr	Asn	Pro	Tyr	35	40	45
Trp	Thr	Ala	Leu	Pro	Ser	Thr	Leu	Glu	Asn	Ala	Thr	Ser	Ile	Ser	Leu	50	55	60
Met	Asn	Leu	Thr	Ser	Thr	Pro	Leu	Cys	Asn	Leu	Ser	Asp	Ile	Pro	Pro	65	70	75
Val	Gly	Ile	Lys	Ser	Lys	Ala	Val	Val	Val	Pro	Trp	Gly	Ser	Cys	His	85	90	95
Phe	Leu	Glu	Lys	Ala	Arg	Ile	Ala	Gln	Lys	Gly	Gly	Ala	Glu	Ala	Met	100	105	110
Leu	Val	Val	Asn	Asn	Ser	Val	Leu	Phe	Pro	Pro	Ser	Gly	Asn	Arg	Ser	115	120	125
Glu	Phe	Pro	Asp	Val	Lys	Ile	Leu	Ile	Ala	Phe	Ile	Ser	Tyr	Lys	Asp	130	135	140
Phe	Arg	Asp	Met	Asn	Gln	Thr	Leu	Gly	Asp	Asn	Ile	Thr	Val	Lys	Met	145	150	155
Tyr	Ser	Pro	Ser	Trp	Pro	Asn	Tyr	Asp	Tyr	Thr	Met	Val	Gly	Ile	Phe	165	170	175
Gly	Ile	Ala	Val	Phe	Thr	Gly	Ala	Leu	Ser	Gly	Tyr	Trp	Ser	Gly	Leu	180	185	190
Val	Glu	Leu	Glu	Asn	Leu	Lys	Ala	Val	Thr	Thr	Glu	Asp	Arg	Glu	Met	195	200	205
Arg	Lys	Lys	Lys	Glu	Glu	Tyr	Leu	Thr	Phe	Ser	Pro	Leu	Thr	Val	Val	210	215	220
Ile	Phe	Val	Val	Ile	Cys	Cys	Val	Met	Met	Val	Leu	Leu	Tyr	Phe	Phe	225	230	235
Tyr	Lys	Trp	Leu	Val	Tyr	Val	Met	Ile	Ala	Ile	Phe	Cys	Ile	Ala	Ser	245	250	255
Ala	Met	Ser	Leu	Tyr	Asn	Cys	Leu	Ala	Ala	Leu	Ile	His	Lys	Ile	Pro	260	265	270
Tyr	Gly	Gln	Cys	Thr	Ile	Ala	Cys	Arg	Gly	Lys	Asn	Met	Glu	Val	Arg	275	280	285
Leu	Ile	Phe	Leu	Ser	Gly	Leu	Cys	Ile	Ala	Val	Ala	Val	Val	Trp	Ala	290	295	300
Val	Phe	Arg	Asn	Glu	Asp	Arg	Trp	Ala	Trp	Ile	Leu	Gln	Asp	Ile	Leu	305	310	315
Gly	Ile	Ala	Phe	Cys	Leu	Asn	Leu	Ile	Lys	Thr	Leu	Lys	Leu	Pro	Asn	325	330	335
Phe	Lys	Ser	Cys	Val	Ile	Leu	Leu	Gly	Leu	Leu	Leu	Leu	Tyr	Asp	Val	340	345	350
Phe	Phe	Val	Phe	Ile	Thr	Pro	Phe	Ile	Thr	Lys	Asn	Gly	Glu	Ser	Ile	355	360	365
Met	Val	Glu	Leu	Ala	Ala	Gly	Pro	Phe	Gly	Asn	Asn	Glu	Lys	Leu	Pro	370	375	380



Val Val Ile Arg Val Pro Lys Leu Ile Tyr Phe Ser Val Met Ser Val  
 385 390 395 400  
 Cys Leu Met Pro Val Ser Ile Leu Gly Phe Gly Asp Ile Ile Val Pro  
 405 410 415  
 Gly Leu Leu Ile Ala Tyr Cys Arg Arg Phe Asp Val Gln Thr Gly Ser  
 420 425 430  
 Ser Tyr Ile Tyr Tyr Val Ser Ser Thr Val Ala Tyr Ala Ile Gly Met  
 435 440 445  
 Ile Leu Thr Phe Val Val Leu Val Leu Met Lys Lys Gly Gln Pro Ala  
 450 455 460  
 Leu Leu Tyr Leu Val Pro Cys Thr Leu Ile Thr Ala Ser Val Val Ala  
 465 470 475 480  
 Trp Arg Arg Lys Glu Met Lys Lys Phe Trp Lys Gly Asn Ser Tyr Gln  
 485 490 495  
 Met Met Asp His Leu Asp Cys Ala Thr Asn Glu Glu Asn Pro Val Ile  
 500 505 510  
 Ser Gly Glu Gln Ile Val Gln Gln  
 515 520

<210> 19  
 <211> 684  
 <212> PRT  
 <213> Homo sapiens

<400> 19  
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 Ser Thr Val Ala Gly Gly Lys Tyr Gly Val Ala His Val Val Ser Glu  
 20 25 30  
 Asn Trp Ser Lys Asp Tyr Cys Ile Leu Phe Ser Ser Asp Tyr Ile Thr  
 35 40 45  
 Leu Pro Arg Asp Leu His His Ala Pro Leu Leu Pro Leu Tyr Asp Gly  
 50 55 60  
 Thr Lys Ala Pro Trp Cys Pro Gly Glu Asp Ser Pro His Gln Ala Gln  
 65 70 75 80  
 Leu Arg Ser Pro Ser Gln Arg Pro Leu Arg Gln Thr Thr Ala Met Val  
 85 90 95  
 Met Arg Gly Asn Cys Ser Phe His Thr Lys Gly Trp Leu Ala Gln Gly  
 100 105 110  
 Gln Gly Ala His Gly Leu Leu Ile Val Ser Arg Val Ser Asp Gln Gln  
 115 120 125  
 Cys Ser Asp Thr Thr Leu Ala Pro Gln Asp Pro Arg Gln Pro Leu Ala  
 130 135 140  
 Asp Leu Thr Ile Pro Val Ala Met Leu His Tyr Ala Asp Met Leu Asp  
 145 150 155 160

Ile Leu Ser His Thr Arg Gly Glu Ala Val Val Arg Val Ala Met Tyr  
 165 170 175  
 Ala Pro Pro Glu Pro Ile Ile Asp Tyr Asn Met Leu Val Ile Phe Ile  
 180 185 190  
 Leu Ala Val Gly Thr Val Ala Ala Gly Gly Tyr Trp Ala Gly Leu Thr  
 195 200 205  
 Glu Ala Asn Arg Leu Gln Arg Arg Arg Ala Arg Arg Gly Gly Gly Ser  
 210 215 220  
 Gly Gly His His Gln Leu Gln Glu Ala Ala Ala Glu Gly Ala Gln  
 225 230 235 240  
 Lys Glu Asp Asn Glu Asp Ile Pro Val Asp Phe Thr Pro Ala Met Thr  
 245 250 255  
 Gly Val Val Val Thr Leu Ser Cys Ser Leu Met Leu Leu Leu Tyr Phe  
 260 265 270  
 Phe Tyr Asp His Phe Val Tyr Val Thr Ile Gly Ile Phe Gly Leu Gly  
 275 280 285  
 Ala Gly Ile Gly Leu Tyr Ser Cys Leu Ser Pro Leu Val Cys His Leu  
 290 295 300  
 Ser Leu Arg Gln Tyr Gln Arg Pro Pro His Ser Leu Trp Ala Ser Leu  
 305 310 315 320  
 Pro Leu Pro Leu Leu Leu Leu Ala Ser Leu Cys Ala Thr Val Ile Ile  
 325 330 335  
 Phe Trp Val Ala Tyr Arg Asn Glu Asp Arg Trp Ala Trp Leu Leu Gln  
 340 345 350  
 Asp Thr Leu Gly Ile Ser Tyr Cys Leu Phe Val Leu His Arg Val Arg  
 355 360 365  
 Leu Pro Thr Leu Lys Asn Cys Ser Ser Phe Leu Leu Ala Leu Leu Ala  
 370 375 380  
 Phe Asp Val Phe Phe Val Phe Val Thr Pro Phe Phe Thr Lys Thr Gly  
 385 390 395 400  
 Glu Ser Ile Met Ala Gln Val Ala Leu Gly Pro Ala Glu Ser Ser Ser  
 405 410 415  
 His Glu Arg Leu Pro Met Val Leu Lys Val Pro Arg Leu Arg Val Ser  
 420 425 430  
 Ala Leu Thr Leu Cys Ser Gln Pro Phe Ser Ile Leu Gly Phe Gly Asp  
 435 440 445  
 Ile Val Val Pro Gly Phe Leu Val Ala Tyr Cys Cys Arg Phe Asp Val  
 450 455 460  
 Gln Val Cys Ser Arg Gln Ile Tyr Phe Val Ala Cys Thr Val Ala Tyr  
 465 470 475 480  
 Ala Val Gly Leu Leu Val Thr Phe Met Ala Met Val Leu Met Gln Met  
 485 490 495  
 Gly Gln Pro Ala Leu Leu Tyr Leu Val Ser Ser Thr Leu Leu Thr Ser  
 500 505 510

Leu Ala Val Ala Ala Cys Arg Gln Glu Leu Ser Leu Phe Trp Thr Gly  
 515 520 525  
 Gln Gly Arg Ala Lys Met Cys Gly Leu Gly Cys Ala Pro Ser Ala Gly  
 530 535 540  
 Ser Arg Gln Lys Gln Glu Gly Ala Ala Asp Ala His Thr Ala Ser Thr  
 545 550 555 560  
 Leu Glu Arg Gly Thr Ser Arg Gly Ala Gly Asp Leu Asp Ser Asn Pro  
 565 570 575  
 Gly Glu Asp Thr Thr Glu Ile Val Thr Ile Ser Glu Asn Glu Ala Thr  
 580 585 590  
 Asn Pro Glu Asp Arg Ser Asp Ser Ser Glu Gly Trp Ser Asp Ala His  
 595 600 605  
 Leu Asp Pro Asn Glu Leu Pro Phe Ile Pro Pro Gly Ala Ser Glu Glu  
 610 615 620  
 Leu Met Pro Leu Met Pro Met Ala Met Leu Ile Pro Leu Met Pro Leu  
 625 630 635 640  
 Met Pro Pro Pro Ser Glu Leu Gly His Val His Ala Gln Ala Gln Ala  
 645 650 655  
 His Glu Thr Gly Leu Pro Trp Ala Gly Leu His Lys Arg Lys Gly Leu  
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 Lys Val Arg Lys Ser Met Ser Thr Gln Ala Pro Leu  
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<210> 20  
 <211> 2052  
 <212> DNA  
 <213> Homo sapiens

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